

ABSTRACT OF THE DISCLOSURE

A reflector is provided as well as a time-of-flight mass spectrometer with a reflector. The mass spectrometers is used for determining the chemical structure of molecules as well as for the quantitative analysis of unknown mixtures of substances. Design effort is minimized, especially for the reflector. The reflector is present in the time-of-flight mass spectrometer to generate an electrostatic field permitting the best possible focusing for the deflection of the ions. The reflector body is made in one piece as a radially symmetrical trough. The reflector is preferably made of a stainless steel or a carrier material with conductive coating and is polished on the inner side of the trough.